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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/668,811 | 09/22/2003 | Wilson Wong | 174/281 | 1945 |
| 36981 | 7590 | 05/05/2005 | EXAMINER | |
| FISH & NEAVE IP GROUP | | | CHO, JAMES HYONCHOL | |
| ROPES & GRAY LLP | | | | |
| 1251 AVENUE OF THE AMERICAS FL C3 | | | ART UNIT | |
| NEW YORK, NY 10020-1105 | | | PAPER NUMBER | |
| | | | 2819 | |

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,811

Applicant(s)

WONG ET AL.

Examiner

James Cho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-29 is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-16, 20 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 9-11, 17-19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10-29-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because lines, numbers & letters in Figs. 1 - 9 are not uniformly thick and well defined, clean, durable, and black. 37 CFR 1.84(l). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- are rejected under 35 U.S.C. 102(b) as being anticipated by Bonaccio et al. (US PAT No. 5,706,222).

Regarding claims 1 and 16, Fig. 5 of Bonaccio et al. teaches an apparatus for determining when a differential input signal received from a transmitter is a valid signal (col. 6, lines 9-14), the apparatus comprising: a dynamically adjustable signal detector (352 has programmable comparator which is dynamically adjustable) that receives as input the differential input signal (differential signals from 351) and is operative to output a signal (P-COMP, N-COMP, col. 6, lines 9-14) indicative of whether the differential input signal is a valid signal based on at least one threshold setting and control circuitry (353) that receives as input at least one control signal (Threshold Reference, Select,

Trim) and is operative to set the dynamically adjustable signal detector with the at least one threshold setting based on the at least one control signal (based on Threshold Reference, Select, Trim).

Regarding claim 2, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 1 wherein the at least one threshold setting includes one of a differential voltage, peak power, and average power (differential voltage, col. 6, lines 9-14).

Regarding claim 3, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 1 wherein the dynamically adjustable signal detector determines whether the differential input signal meets the at least one threshold setting (col. 6, lines 9-14).

Regarding claims 4, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 3 wherein the dynamically adjustable signal detector: outputs a first logic value when the differential input signal meets the at least one threshold setting (logic high of P-COMP indicates a qualified signal ; col. 6, lines 9-14); and outputs a second logic value when the differential input signal does not meet the at least one threshold setting (logic low of P-COMP indicates a unqualified signal ; col. 6, lines 9-14).

Regarding claim 5, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 3 wherein the dynamically adjustable signal detector: outputs a first logic value when the differential input signal meets the at least one threshold setting for a first predetermined

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time period (Fig. 2A-H shows threshold satisfied in time domain); and outputs a second logic value when the differential input signal does not meet the at least one threshold setting for a second predetermined time period (Fig. 2A-H shows threshold unsatisfied in time domain).

Regarding claims 6-8, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 1 wherein the at least one control signal is set by programmable logic resource circuitry, circuitry external to a programmable logic resource, or at least one control signal is set by user input (col. 5, lines 10-50; programmable threshold bits inherently requires a programmable logic resource).

Regarding claim 20, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 16 wherein the at least one control signal includes a value for the differential voltage threshold (col. 5, lines 10-15).

Regarding claim 22, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 16 wherein the at least one control signal has a value that corresponds to the differential threshold stored in a lookup table in the control circuitry (col. 5, lines 10-50; programmable threshold bits inherently requires a storage, e.g. a lookup table).

Regarding claims 23-25, Fig. 5 of Bonaccio et al. teaches the apparatus of claim 16 The apparatus of claim 16 wherein the at least one control signal is set by programmable logic resource circuitry, the at least one control signal is set by circuitry

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external to a programmable logic resource, or the at least one control signal is set by user input (col. 5, lines 10-50; programmable threshold bits inherently requires a programmable logic resource).

Allowable Subject Matter

Claims 26-29 are allowable over the prior art of record.

Claims 9-11, 17-19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Although Bonaccio et al. teaches a peak detector, one of ordinary skill in the art would not have been motivated to modify the teaching of Bonaccio et al. to further include, among other things, the specific of the dynamically adjustable signal detector receiving a new threshold setting in response to detecting a change in signaling protocol as required by claim 9 and in a communications link between the transmitter and a receiver, wherein the change is due to one of component aging and changes in environmental conditions as required by claim 10, a dynamically adjustable equalization circuit as required by claim 11, the dynamically adjustable signal detector computing a difference between a positive and a negative terminals of the differential input signal to produce a differential input voltage as required by claims, 17 and 26, and the at least one control signal being indicative of whether the differential voltage threshold is to be increased or decreased as required by claim 21.

Conclusion

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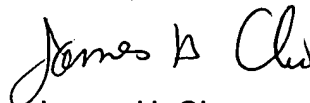
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fernandez et al. (US PAT No. 5,448,200) discloses a differential comparator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Cho whose telephone number is 571-272-1802. The examiner can normally be reached on M-F 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James H. Cho
Primary Examiner
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Date: 4-26-2005